

Project Baseline Summary Report

Data Source: **EM CDB**

Operations/Field Office: **Ohio**

Site Summary Level: **Fernald Environmental Management Project**

Project **OH-FN-01 / Facility Shutdown**

Report Number: **GEN-01b**

Print Date: **3/9/2000**

HQ ID: **0522**

General Project Information

Project Description Narratives

Purpose, Scope, and Technical Approach:

Facilities Closure Project includes workscope from Project Support and Integration, Utilities Projects, Facilities Shutdown, and Site Project Services and Maintenance. Project Support and Integration provides administrative management responsible for providing quality assurance, project integration, site training, safety and health, project controls, contracts and acquisitions, project administrative support, enhanced work planning, and environmental compliance. Technical Services provides for project support and planning, bidding, constructability, welding engineering, administration, construction functional area procedures, site wide rigging training program, and management of construction support contractor. Utilities Projects provides for execution of utilities integration, utilities operation, and facility management. Facilities Shutdown provides for performance of utility disconnects on process equipment and structures, removal and disposition of residues from equipment, removal and disposition of uranium and process material, and removal of equipment as required. Site Project Services provides for general site support (predominately union business and labor shop), decontamination and site services, garage and transportation, porters and laundry, and site project services administrative. Maintenance provides for administrative maintenance functions, work instructions for corrective and preventive maintenance, engineering support for instrumentation, electrical and HVAC equipment, engineering design and analysis to support real and equipment repair, and planning and estimating required to support maintenance functions.

This project is officially defined to include the former Production Area and remediation of associated facilities and equipment. The scope of the project includes the implementation of the necessary remedial design, remedial actions, removal actions, Hazardous Waste Management Units closures, and radiological and or compliance monitoring required to mitigate the unacceptable threats to human health and the environment associated with the contaminated structures and inventory at the FEMP. In addition, general site support services critical to the implementation of clean-up, assessment program management and support activities are included. It manages all site wage support, Labor Shop, Vehicle Maintenance, Work Coordination, Decontamination and size reduction services, Transportation, and Laundry and Porter Services.

Technical Approach: The FEMP is removing equipment and materials from specific plant complexes prior to the facility being dismantled. Equipment and materials are removed and placed in temporary storage until the OSDF can accept the waste.

Technology Needs: The D&D project has identified other needs that could improve safety and lower potential costs. If applicable, these approaches could be used for OH-FN-01.

Project Status in FY 2006:

FY2006 status includes minimal site support services, utilities, and maintenance activities to support other PBS activities to project end.

Post-2006 Project Scope:

Post-2006 scope includes minimal site support services, utilities, and maintenance activities to support remaining PBS activities. Minimal services will support the maintenance and standby of the Advanced Waste Water Treatment Facility (AWWT), monitoring and maintenance activities, D&D of the AWWT and related on-site and off-site pipelines and wells and related soils, and either shipment of this material off site or disposal in Cell 8 of the

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OSDF.

Project End State

Access to the OSDF will remain restricted and monitored and under institutional controls in perpetuity. The remainder of the site is expected to achieve final cleanup levels which could support various land uses. However, the decision to limit use to ecological restoration and recreational use was made based on DOE's Natural Resource Damages Act obligations and stakeholder input. Residential and agricultural uses will not be considered for any portion of the site consistent with the recommendations of the Fernald Citizens Advisory Board. Industrial uses may be considered for the 23 acres of potential economic development land. DOE, or a successor agency, will maintain stewardship responsibility for the site.

Cost Baseline Comments:

Assumptions are that landlord activities level of spending is based on the remediation schedule, that real estate will be devalued (i.e. zero asset) in a timely manner to allow the safe shutdown and building shutdown programs to continue, and that there is no contingency. Estimates to support the baseline for this PBS were completed using a bottoms-up approach.

The Ohio Field Office has an aggressive cost savings program in place to contain or reduce the Total Estimated Cost of the project; however, there is potential for cost growth at the Fernald Environmental Management Project because the baseline estimates do not include contingency, and Operable Unit 4 (Silos Project) is in the process of amending the Record of Decision with the EPAs.

Safety & Health Hazards:

The hazards of this project include radiological hazards due to penetrating radiation as well as the potential for internal dose from radionuclide uptake. Physical hazards include injury from heavy equipment operations. Potential exposure to hazardous chemicals and biological hazards may also be encountered. In addition, workers could encounter normal occupational hazards such as lifting, tripping, or falling. Weather extremes expose personnel to heat and cold stress conditions.

Safety & Health Work Performance:

The resources necessary to accomplish the work safely are provided through the Authorization basis, FEMP's Safety Performance Requirements manual, Radiation Protection Program, and through the resources allocated to the site's safety management system in the following functional categories: radiological safety, industrial hygiene, criticality safety, occupational safety and health, emergency management, fire safety and occupational medicine. Safety and Health resources are planned and allocated into these categories by cost centers through the work breakdown structure. There are no unfunded Safety and Health categories.

PBS Comments:

Facilities Shutdown is completed to allow for D&D and final closure of the site. The FEMP project has already undergone strategic planning to accelerate the cleanup from 25 years to 10 years. This has resulted in a significant amount of savings. To further reduce mortgage costs and allocate additional funds to the cleanup activities requires: a) the removal of the nuclear materials from the site; b) completion of safe shutdown activities; c) utility reduction projects; and d) availability of innovative technology for dismantlement. A factor that allowed the FEMP to pursue accelerated cleanup is the agreement and recommendations made by the Citizens Task Force on cleanup levels and disposition of the waste (amount and waste

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Project Description Narratives

acceptance criteria levels for onsite disposal facility and disposition off-site for wastes above the waste acceptance criteria).

Fernald developed and implemented an accelerated schedule in FY 1995. This baseline was validated and granted Level 1 approval on August 21, 1996. Impacts to the baseline due to the current funding targets will cause a three year schedule extension.

Baseline Validation Narrative:

On October 29, 1998, DOE-FEMP received DOE-HQ approval on the Fiscal Year 1999 Replan Baseline Change Proposal to the current FEMP Baseline. The FEMP Baseline had been previously validated after DOE-HQ completed their review and provided their approval on August 21, 1996. Many internal and external reviews have been performed on the FEMP Baseline. In March 1998, the U.S. Corps of Engineers performed an external cost review on the OSDF project with results showing the disposal cell estimates consistent with industry standards. In August 1997 and January 1996, external cost reviews were performed on Operable Unit 4, one by the U.S. Corps of Engineers and one by the U.S. Department of Interior (DOI) and the U.S. Department of Energy (DOE). In June 1996, LMI, Janson Associates, and Burns & Roe performed an external cost review on support costs showing the cost estimates were reasonable. In July 1995, DOI and DOE performed an external cost review on Operable Unit 1 and made formal recommendations to generate technical and/or economic advantages. In September 1993, MTC, Booz-Allen, and Burns & Roe performed an external cost review on the FEMP site and had no significant findings. In addition to external cost reviews, since 1991 almost fifteen internal reviews have been performed.

General PBS Information

Project Validated?	Yes	Date Validated:	10/29/1998
Has Headquarters reviewed and approved project?	Yes		
Date Project was Added:	12/1/1997		
Baseline Submission Date:	7/8/1999		
FEDPLAN Project?	Yes		

Drivers:	CERCLA	RCRA	DNFSB	AEA	UMTRCA	State	DOE Orders	Other
	Y	Y	N	N	N	N	N	Y

Project Identification Information

DOE Project Manager:	John Trygier
DOE Project Manager Phone Number:	513-648-3154
DOE Project Manager Fax Number:	513-648-3076
DOE Project Manager e-mail address:	john.trygier@fernald.gov

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General PBS Information

Is this a High Visibility Project (Y/N):

Planning Section

Baseline Costs (in thousands of dollars)

	1997-2006 Total	2007-2070 Total	1997-2070 Total	1997	Actual 1997	1998	Actual 1998	1999	2000	2001	2002	2003	2004	2005	2006	
PBS Baseline (current year dollars)	277,430	16,240	293,670	45,261	39,335	40,841	41,710	30,341	29,174	32,963	21,774	17,143	13,102	23,139	23,692	
PBS Baseline (constant 1999 dollars)	262,464	13,033	275,497	45,261	39,335	40,841	41,710	30,341	28,407	31,253	20,101	15,410	11,468	19,721	19,661	
PBS EM Baseline (current year dollars)	277,430	16,240	293,670	45,261	39,335	40,841	41,710	30,341	29,174	32,963	21,774	17,143	13,102	23,139	23,692	
PBS EM Baseline (constant 1999 dollars)	262,464	13,033	275,497	45,261	39,335	40,841	41,710	30,341	28,407	31,253	20,101	15,410	11,468	19,721	19,661	
	2007	2008	2009	2010	2011- 2015	2016- 2020	2021- 2025	2026- 2030	2031- 2035	2036- 2040	2041- 2045	2046- 2050	2051- 2055	2056- 2060	2061- 2065	2066- 2070
PBS Baseline (current year dollars)	12,033	4,207	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS Baseline (constant 1999 dollars)	9,723	3,310	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS EM Baseline (current year dollars)	12,033	4,207	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PBS EM Baseline (constant 1999 dollars)	9,723	3,310	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Baseline Escalation Rates

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1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
0.00%	0.00%	0.00%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.70%	2.10%
2010	2011-2015	2016-2020	2021-2025	2026-2030	2031-2035	2036-2040	2041-2045	2046-2050	2051-2055	2056-2060	2061-2065	2066-2070
2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%	2.10%

Project Reconciliation

Project Completion Date Changes:

Previously Projected End Date of Project: 9/30/1998

Current Projected End Date of Project: 9/30/2008

Explanation of Project Completion Date Difference (if applicable):

The safe shutdown activities for Plant 6 extended into FY1999 and were completed in March 1999. This marked the completion of safe shutdown for all nuclear facilities. Safe shutdown of non-nuclear facilities and landlord activities continue through FY2008.

Project Cost Estimates (in thousands of dollars)

Previously Estimated Lifecycle Cost (1997 - 2070, 1998 Dollars):	278,637	Actual 1997 Cost:	39,335	Actual 1998 Cost:	41,710
Previously Estimated Lifecycle Cost of Project (1999 - 2070, 1998 Dollars):	197,592	Inflation Adjustment (2.7% to convert 1998 to 1999 dollars):			5,335
Previously Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	202,927				

Project Cost Changes

	Cost Adjustments	Reconciliation Narratives
Cost Change Due to Scope Deletions (-):	7,106	(\$5,000K) due to transfer of training & Enhanced Work Planning. (\$2,106K) due utilities cost actuals.
Cost Reductions Due to Efficiencies (-):		
Cost Associated with New Scope (+):		
Cost Growth Associated with Scope Previously Reported (+):		
Cost Reductions Due to Science & Technology Efficiencies (-):		

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Project Reconciliation

Subtotal:	195,821
Additional Amount to Reconcile (+):	-6,426 (\$5,337K) due to FY97/F98 Uncosted Balances. (\$1,091K) due to escalation error.
Current Estimated Lifecycle Cost (1999 - 2070, 1999 Dollars):	189,395

Milestones

Milestone/Activity	Field Milestone Code	Original Date	Baseline Date	Legal Date	Forecast Date	Actual Date	EA	DNFSB	Mgmt. Commit.	Key Decision	Intersite
Complete Plant 6 Safe Shutdown.		3/31/1999							Y		
Complete safe shutdown on all facilities.		9/30/2008									
Initiate safe shutdown activities.		10/1/1992									

Milestones - Part II

Milestone/Activity	Field Milestone Code	Critical Decision	Critical Closure Path	Project Start	Project End	Mission Complete	Tech Risk	Work Scope Risk	Intersite Risk	Cancelled	Milestone Description
Complete Plant 6 Safe Shutdown.			Y				1	1	1		This milestone was completed on March 11, 1999, ahead of schedule.
Complete safe shutdown on all facilities.					Y	Y					Complete safe shutdown involving the removal of residual materials in lines and equipment and the removal of asbestos for former nuclear facilities with only isolated areas of holdup materials. Safe shutdown of non-nuclear facilities continues.
Initiate safe shutdown activities.				Y							Initiate safe shutdown activities for former nuclear and non-nuclear facilities.

Performance Measure Metrics

Category/Subcategory	Units	1997-2006 Total	2007-2070 Total	1997-2070 Total	Actual Pre-1997	Planned 1997	Actual 1997	Planned 1998	Planned 1999	Planned 2000	Planned 2001	Planned 2002	Planned 2003	Planned 2004
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Performance Measure Metrics

Category/Subcategory	Units	1997-2006 Total	2007-2070 Total	1997-2070 Total	Actual Pre-1997	Planned 1997	Actual 1997	Planned 1998	Planned 1999	Planned 2000	Planned 2001	Planned 2002	Planned 2003	Planned 2004
Fac.														
Deact. During Per.	NF	2.00	0.00	2.00					2.00					
MLLW														
Storage	M3							107.00	107.00	107.00	0.00			
MLLW														
Ship to DOE Disp.	M3	0.00	0.00	0.00	0.00		0.00							
LLW														
Storage	M3							4,077.00	3,871.00	1,200.50	0.00			
LLW														
Comm. Disp.	M3	0.00	0.00	0.00	0.00		0.00							
LLW														
Ship to DOE Disp.	M3	4,391.00	0.00	4,391.00	0.00		0.00	0.00	520.00	2,670.50	1,200.50			
Rem. Waste														
Disposed	M3	658.00	0.00	658.00	0.00		0.00	0.00	160.00	284.00	214.00			
Tech.														
Deployed	Ntd	1.00	0.00	1.00				1.00						
Category/Subcategory	Units	Planned 2004	Planned 2005	Planned 2006	Planned 2007	Planned 2008	Planned 2009	Planned 2010	Planned 2011 - 2015	Planned 2016 - 2020	Planned 2021 - 2025	Planned 2026 - 2030	Planned 2031 - 2035	
Fac.														
Deact. During Per.	NF													
MLLW														
Storage	M3													

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Category/Subcategory	Units	Planned 2004	Planned 2005	Planned 2006	Planned 2007	Planned 2008	Planned 2009	Planned 2010	Planned 2011 - 2015	Planned 2016 - 2020	Planned 2021 - 2025	Planned 2026 - 2030	Planned 2031 - 2035
MLLW													
Ship to DOE Disp.	M3												
LLW													
Storage	M3												
LLW													
Comm. Disp.	M3												
LLW													
Ship to DOE Disp.	M3												
Rem. Waste													
Disposed	M3												
Tech.													
Deployed	Ntd												
Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	Planned 2066 - 2070	Exceptions	Lifecycle Total			
Fac.													
Deact. During Per.	NF									2.00			
MLLW													
Storage	M3												
MLLW													
Ship to DOE Disp.	M3									0.00			
LLW													
Storage	M3												
LLW													
Comm. Disp.	M3									3,872.00			

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Category/Subcategory	Units	Planned 2036 - 2040	Planned 2041 - 2045	Planned 2046 - 2050	Planned 2051 - 2055	Planned 2056 - 2060	Planned 2061 - 2035	Planned 2066 - 2070	Exceptions	Lifecycle Total
LLW										
Ship to DOE Disp.	M3									3,871.00
Rem. Waste										
Disposed	M3									498.00
Tech.										
Deployed	Ntd									1.00

Technology Deployments

Deployment Year			
Deployment Status	Planned	Forecast	Actual Date
Technology Name: Oxy-Gasoline Torch			
Deployment Commitment	1998	1998	8/30/1998